

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of Claims**

Claims 60-69 are pending in this application. Claims 60 and 62 are independent. Claim 61 depends directly from claim 60. Claims 63-69 depend, directly or indirectly, from claim 62.

**Claim Amendments**

Claims 60 and 62 have been amended by way of this reply to improve the use of idiomatic English. Specifically, independent claims 60 and 62 have been amended by improving the wording for the dielectric case. Support for these amendments can be found in figures 15 and 19 and in the previously presented claims. No new matter has been added by way of these amendments.

**Rejection(s) under 35 U.S.C. § 102(a,e)**

Claims 60-66 are rejected under 35 U.S.C. § 102(a,e) as being anticipated by U.S. Patent Application No. 2003/0129107 ("Denes"). To the extent this rejection may still apply to the amended claims, this rejection is respectfully traversed.

Independent claim 60, as amended, recites a plasma surface processing apparatus that is comprised of a metallic electrode body (56 as seen in Figure 15) and a dielectric case (57a as seen in Figure 15). The dielectric case is provided as a solid dielectric layer disposed on the electrode body. The dielectric case includes an integral case body which has an opening and an

internal space communicated to the opening. The electrode body is received in the internal space through the opening. The integral case body is provided with a protrusive end part on a side of the opening thereof. The protrusive end part protrudes relative to said electrode body. Figures 15, 19, 28, 29, 30 and 32 clearly show the protrusive end part of the dielectric case as claimed.

Denes fails to teach or disclose “a protrusive end part” as claimed in independent claim 60. The protrusive end part disposed on the integral case body on the side of the opening provides advantageous benefits as claimed. Specifically, abnormal electric discharges such as an arc or a creeping discharge are prevented from running not only from the internal space’s bottom side edge of the electrode body 56 but also from the opening side edge of the electrode body 56 to a material to be processed.

Denes first electrode 130 has a dielectric layer 138 that has an opening. However, the opening end of the dielectric layer 138 stops prior to reaching the first electrode bed 136. The region between the electrode bed 136 and first electrode 130 is disclosed in Denes as the base 132 of the electrode 130. This teaches and discloses that the dielectric layer stops short and does not extend to the edge of the first electrode and definitely not beyond so as to protrude. Therefore, the dielectric layer 138 does not have “a protrusive end part” as claimed in independent claim 60 of the invention. It instead has a substantially different arrangement wherein the dielectric layer stops short of fully extending to cover the first electrode. Further, Denes shows an additional embodiment in Figure 4 that takes the stopping short of the dielectric layer further by having it only cover the tip. Additionally, in paragraph [0042] Denes mentions the ability to leave out one or both dielectric layers entirely, thus teaching further away from the present invention. Thus, Denes’ electrode 130 and dielectric case 138 not only fail to teach or

disclose “a protrusive end part” as claimed in independent claim 1 of the invention, but also teach away from it.

Additionally, Denes discloses another electrode member type 140 and 150 which is covered by a dielectric layer 148. The dielectric layer 148 does not have “an opening” as claimed in the present invention as: “said electrode body being received in said internal space through said opening.” Without the claimed opening, the protrusive end as claimed is also necessarily missing. Specifically, the protrusive end is claimed as: “being provided with a protrusive end part on a side of said opening thereof” in independent claim 60.

Independent claim 62, as amended, claims “a first dielectric case” comprising “a first protrusive end part,” and “a second dielectric case” comprising “a second protrusive end part.” As discussed above, Denes fails to teach or disclose a protrusive end part and therefore also fails to disclose a second protrusive end part for at least the same reasons.

Dependent claim 65 specifies that, in one embodiment of the invention, it is possible to have the first dielectric case connect integrally with the second dielectric case. Specifically, claim 65 claims the limitation of: “wherein said first dielectric case and said second dielectric case are integrally connected to one another.” From Figures 1, 3, and 4 of Denes, one of ordinary skill in the art will appreciate that dielectric layers, 148 and 138, are formed so as to never connect. Additionally, in the Denes Specification, the dielectric layers 148 and 138 are consistently mentioned as separate elements. Therefore, one of ordinary skill in the art would presume the inventor means for the elements to be considered separately. Given the support in the figures for their consistent separation, one can appreciate that Denes fails to teach or suggest the limitation as claimed in claim 65.

In view of the above, Denes does not teach or disclose at least the limitation of a plasma surface processing apparatus comprising “a protrusive end part.” Denes therefore lacks at least the limitations discussed above. Because Denes fails to teach or disclose the limitations as stated in independent claims 60 and 62, claims 60 and 62 as amended are patentable over the cited reference. Dependent claims are also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

**Rejection(s) under 35 U.S.C. § 103(a)**

Claims 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denes in view of U.S. Patent No. 6,137,231 (“Anders”). To the extent this rejection may still apply to the amended claims, this rejection is respectfully traversed.

In view of the above, Denes fails to show or suggest the present invention as recited in amended independent claim 62, from which claims 67 and 68 depend. Thus claim 62 is patentable over Denes. Anders is cited as disclosing a dielectric case plate that varies in thickness in a direction of gas flow, and as disclosing a distance between a first and second electrode that varies along a direction of gas flow. None of the pertinent limitations of the claimed invention are present in Anders. Specifically, Anders is completely silent with respect to at least the above limitations recited in independent claim 62. Therefore, Anders fails to show or suggest that which Denes lacks.

Alternatively, even if, *arguendo*, the protrusive end part is recited in a reference, the Examiner recites Anders as teaching an *electrode* (164 and/or 162 in Figure 9) that varies along a direction of gas flow. Claim 67 claims a *dielectric case* that comprises a plate with thickness that varies along a direction of gas flow. This is contrary to Anders who teaches that

the electrode's thickness changes along a direction of gas flow. In Anders, the dielectric case plate 170b does not vary in thickness in a direction of gas flow. Therefore, Anders fails to show or suggest the limitations from claim 67 which Denes also lacks.

Additionally, the Examiner recites Anders as teaching the limitations of claim 68. Claim 68 claims "a distance between said first electrode body and said second electrode body varies along a direction of gas flow in said gas passage." Figure 9 of Anders clearly shows that electrode 162 and electrode 164 remain a constant distance from each other with plate 170b extending therebetween. Therefore, Anders fails to show or suggest the limitations from claim 68, which Denes also lacks.

In view of the above, Denes and Anders, whether considered separately or in combination, fail to show or suggest the present invention as recited in claims 60 and 62. Thus, claims 60 and 62 are patentable over Denes and Anders. Dependent claims 67 and 68 are allowable for at least the same reasons and the reasons discussed above. Accordingly, withdrawal of this rejection is respectfully requested.

**Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 12088/012001).

Dated: November 14, 2006

Respectfully submitted,

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